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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/035,944	03/06/1998	JOHN G. FREED	027575-152	5377

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[REDACTED] EXAMINER

CRAVER, CHARLES R

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2685

DATE MAILED: 04/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. <b>09/035,944</b>	Applicant(s) <b>Freed</b>
	Examiner <b>Charles Craver</b>	Art Unit <b>2685</b>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1)  Responsive to communication(s) filed on Jan 2, 2002.

2a)  This action is FINAL.      2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

#### Disposition of Claims

4)  Claim(s) 1-24 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-24 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.

12)  The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.

2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

15)  Notice of References Cited (PTO-892)

18)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)

19)  Notice of Informal Patent Application (PTO-152)

17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

20)  Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich in view of Younis et al.

#### **Regarding claims 1, 8 and 15,**

Rich discloses a system, apparatus and method comprising

a transmission path (102),

a reception path (104) including

means for processing (111), for computing an error rate of a received signal (col 6 lines 26-34) and for controlling gain based on the error rate (col 6 lines 35-36).

Rich does not disclose an LNA with adjustable input intercept point means adjusted based on the error rate.

Younis states that it is useful in an AGC circuit (FIG 2) in a receiver (1200) to control the gain by utilizing an LNA (1220) with an input intercept point which is adjusted according to

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signal linearity (col 12 lines 1-32) and utilizing an error rate measurement (col 12 line 62-col 13 line 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of Younis to Rich. Rich discloses an AGC loop based in part on a BER (col 6 lines 36-37). Younis states that using a BER or FER to adjust an LNA intercept point “minimizes degradation in the performance of [the] receiver” (col 12 line 1). As such, one of ordinary skill in the art would obviously have been motivated to add an adjustable LNA to the invention of Rich to minimize signal degradation to improve the gain control loop.

**Regarding claims 2, 9 and 16,**

Younis discloses that the adjustment includes a measurement of a received (and thus transmitted) power level (col 12 lines 13-31).

**Regarding claims 3-5, 10-12 and 17-19,**

Younis discloses setting the intercept point at various levels based on thresholds which may vary during use (col 12 line 62-col 13 line 39). Further, Younis discloses maximum and minimum operating intercept levels (col 13 lines 39-49).

**Regarding claims 6, 13 and 20,**

Younis discloses that the error rate may be an FER (col 12 line 62 to col 13 line 10).

**Regarding claims 7, 14 and 21,**

Younis discloses that the gain of the LNA block depends on RSSI (col 7 lines 6-9, col 3 lines 44-54).

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**Regarding claims 22-24,**

Younis discloses that the gain of the LNA itself may stay constant; thus, the IIP may be adjusted without respect to the gain.

***Response to Arguments***

3. Applicant's arguments filed 1-2-02 have been fully considered but they are not persuasive. Regarding the combination of Rich and Younis, the examiner upholds the rejection under 35 USC 103 (a). While it is true that Rich does not disclose the use of an LNA, Rich does disclose the measurement of an error rate, and the use of that error rate in the gain control loop. Younis discloses that a gain control loop benefits from an LNA with an adjustable IIP, and that the calculation for the IIP uses an RSSI slope which incorporates a measured BER or FER. As such, the references are of an analogous art, that is, they both teach the utility of using error rate measurements to improve a gain control loop. Younis adds an adjustable LNA, stating such a receiver "provides the requisite level of performance at reduced power consumption", see abstract, and minimizes degradation in receiver performance, see col 12 line 1. Such statements would have definitely motivated one of ordinary skill in the art to add such an LNA to Rich to improve the influence that the measured error rate has on the gain control loop.

Further, regarding the adjustment of IIP and gain, Younis teaches that the LNA gain is adjusted by an attenuator (1222a), while the IIP is adjusted independently.

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As such, given the obvious motivation to combine the two references, the examiner upholds that one of ordinary skill in the art would have recognized the advantages of Younis and applied the improvement to Rich; such a modification of Rich would have created applicant's invention, and thus the examiner asserts that Rich in view of Younis renders unpatentable the instant invention.

*Conclusion*

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**5. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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**or faxed to:**

(703) 872-9314, (for formal communications intended for entry)

**Or:**

(703) 872-9314 (for informal or draft communications, please label "PROPOSED"

or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal  
Drive, Arlington VA, sixth floor (receptionist).

6. Any inquiry concerning this communication or earlier communications from the examiner  
should be directed to Charles Craver whose telephone number is (703) 305-3965.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,  
Ed Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Group receptionist whose telephone number is (703) 305-4700.

C C  
C. Craver  
April 6, 2002

  
EDWARD F. URBAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600